

SEQUENCE LISTING

<110> Quinnan, Gerald V.
Zhang, Peng Fei

<120> Expression and Characterization of HIV-1 Envelope
Protein Associated with a Broadly Reactive Neutralizing
Antibody Response

<130> 44508-5001-US

<140> US 09/762,261

<141> 2001-02-05

<150> US 60/095,267

<151> 1998-08-04

<150> PCT/US99/17596

<151> 1999-08-04

<160> 4

<170> PatentIn Ver. 2.1

<210> 1

<211> 866

<212> PRT

<213> Human immunodeficiency virus type 1

<220>

<223> R2 strain envelope protein (gp 160)

<400> 1

Met Arg Val Lys Gly Ile Arg Arg Asn Tyr Gln His Trp Trp Gly Trp
1 5 10 15

Gly Thr Met Leu Leu Gly Leu Leu Met Ile Cys Ser Ala Thr Glu Lys
20 25 30

Leu Trp Val Thr Val Tyr Tyr Gly Val Pro Val Trp Lys Glu Ala Thr
35 40 45

Thr Thr Leu Phe Cys Ala Ser Asp Ala Lys Ala Tyr Asp Thr Glu Ala
50 55 60

His Asn Val Trp Ala Thr His Ala Cys Val Pro Thr Asp Pro Asn Pro
65 70 75 80

Gln Glu Val Glu Leu Val Asn Val Thr Glu Asn Phe Asn Met Trp Lys
85 90 95

Asn Asn Met Val Glu Gln Met His Glu Asp Ile Ile Ser Leu Trp Asp
100 105 110

Gln Ser Leu Lys Pro Cys Val Lys Leu Thr Pro Leu Cys Val Thr Leu
115 120 125

Asn Cys Thr Asp Leu Arg	Asn Thr Thr Asn Thr Asn Asn Ser Thr Asp
130	135 140
Asn Asn Asn Ser Asn Ser Glu Gly Thr Ile Lys Gly Gly Glu Met Lys	
145	150 155 160
Asn Cys Ser Phe Asn Ile Ala Thr Ser Ile Gly Asp Lys Met Gln Lys	
165	170 175
Glu Tyr Ala Leu Leu Tyr Lys Leu Asp Ile Glu Pro Ile Asp Asn Asp	
180	185 190
Asn Thr Ser Tyr Arg Leu Ile Ser Cys Asn Thr Ser Val Ile Thr Gln	
195	200 205
Ala Cys Pro Lys Ile Ser Phe Glu Pro Ile Pro Ile His Tyr Cys Ala	
210	215 220
Pro Ala Gly Phe Ala Ile Leu Lys Cys Asn Asp Lys Lys Phe Ser Gly	
225	230 235 240
Lys Gly Ser Cys Lys Asn Val Ser Thr Val Gln Cys Thr His Gly Ile	
245	250 255
Arg Pro Val Val Ser Thr Gln Leu Leu Leu Asn Gly Ser Leu Ala Glu	
260	265 270
Glu Glu Val Val Ile Arg Ser Glu Asn Phe Thr Asn Asn Ala Lys Thr	
275	280 285
Ile Ile Val Gln Leu Arg Glu Pro Val Lys Ile Asn Cys Ser Arg Pro	
290	295 300
Asn Asn Asn Thr Arg Lys Ser Ile Pro Met Gly Pro Gly Arg Ala Phe	
305	310 315 320
Tyr Thr Thr Gly Gln Ile Ile Gly Asp Ile Arg Gln Ala His Cys Asn	
325	330 335
Ile Ser Lys Thr Asn Trp Thr Asn Ala Leu Lys Gln Val Val Glu Lys	
340	345 350
Leu Gly Glu Gln Phe Asn Lys Thr Lys Ile Val Phe Thr Asn Ser Ser	
355	360 365
Gly Gly Asp Pro Glu Ile Val Thr His Ser Phe Asn Cys Ala Gly Glu	
370	375 380
Phe Phe Tyr Cys Asn Thr Thr Gln Leu Phe Asp Ser Ile Trp Asn Ser	
385	390 395 400
Glu Asn Gly Thr Trp Asn Ile Thr Arg Gly Leu Asn Asn Thr Gly Arg	
405	410 415
Asn Asp Thr Ile Thr Leu Pro Cys Arg Ile Lys Gln Ile Ile Asn Arg	
420	425 430

Trp	Gln	Glu	Val	Gly	Lys	Ala	Met	Tyr	Ala	Pro	Pro	Ile	Lys	Gly	Asn
	435						440					445			
Ile	Ser	Cys	Ser	Ser	Asn	Ile	Thr	Gly	Leu	Leu	Leu	Thr	Arg	Asp	Gly
	450					455					460				
Gly	Lys	Asp	Asp	Asn	Ser	Arg	Asp	Gly	Asn	Glu	Thr	Phe	Arg	Pro	Gly
465					470					475					480
Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	Tyr	Lys
				485					490					495	
Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	Ala	Lys	Arg
		500						505					510		
Arg	Val	Val	Gln	Arg	Glu	Glu	Arg	Ala	Val	Gly	Leu	Gly	Ala	Met	Phe
	515						520					525			
Ile	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	Gly	Ala	Ala	Ser	Val
	530					535					540				
Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu	Ser	Gly	Ile	Val	Gln	Gln
545					550					555					560
Gln	Ser	Asn	Leu	Leu	Arg	Ala	Ile	Glu	Ala	Gln	Gln	His	Leu	Leu	Gln
			565					570					575		
Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	Leu	Gln	Ala	Arg	Ile	Leu	Ala	Val
		580						585					590		
Glu	Arg	Tyr	Leu	Lys	Asp	Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser
	595						600					605			
Gly	Lys	Leu	Ile	Cys	Thr	Thr	Thr	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser
	610					615					620				
Lys	Asn	Lys	Thr	Leu	Glu	Ala	Ile	Trp	Asn	Asn	Met	Thr	Trp	Met	Gln
625					630					635					640
Trp	Asp	Lys	Glu	Ile	Asp	Asn	Tyr	Thr	Lys	Leu	Ile	Tyr	Ser	Leu	Ile
			645						650					655	
Glu	Glu	Ser	Gln	Ile	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu
			660					665					670		
Leu	Asp	Lys	Trp	Ala	Asn	Leu	Trp	Asn	Trp	Phe	Asp	Ile	Ser	Asn	Trp
		675					680					685			
Leu	Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly
	690					695					700				
Leu	Arg	Ile	Val	Phe	Val	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	Gln
705					710					715					720
Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Arg	Leu	Pro	Ala	Pro	Arg	Gly
				725					730					735	

Pro Asp Arg Pro Glu Glu Ile Glu Glu Glu Gly Gly Asp Arg Asp Arg
 740 745 750

Asp Arg Ser Gly Leu Leu Val Asp Gly Phe Leu Thr Leu Ile Trp Val
 755 760 765

Asp Leu Arg Ser Leu Cys Leu Phe Ser Tyr His Arg Leu Arg Asp Leu
 770 775 780

Leu Leu Ile Val Thr Arg Ile Val Glu Leu Leu Gly Arg Arg Gly Trp
 785 790 795 800

Glu Ile Leu Lys Tyr Trp Trp Asn Leu Leu Gln Tyr Trp Ser Gln Glu
 805 810 815

Leu Lys Asn Ser Ala Val Ser Leu Phe Asn Ala Thr Ala Ile Ala Val
 820 825 830

Ala Glu Gly Thr Asp Arg Val Ile Glu Val Leu Gln Arg Val Gly Arg
 835 840 845

Ala Leu Leu His Ile Pro Thr Arg Ile Arg Gln Gly Leu Glu Arg Ala
 850 855 860

Leu Leu
 865

<210> 2
 <211> 17
 <212> PRT
 <213> Human immunodeficiency virus type 1

<220>
 <223> segment of R2 strain V3 domain

<400> 2
 Lys Ser Ile Pro Met Gly Pro Gly Arg Ala Phe Tyr Thr Thr Gly Gln
 1 5 10 15

Ile

<210> 3
 <211> 35
 <212> PRT
 <213> Human immunodeficiency virus type 1

<220>
 <223> R2 strain V3 domain

<400> 3
 Cys Ser Arg Pro Asn Asn Asn Thr Arg Lys Ser Ile Pro Met Gly Pro
 1 5 10 15

Gly Arg Ala Phe Tyr Thr Thr Gly Gln Ile Ile Gly Asp Ile Arg Gln
20 25 30

Ala His Cys
35

<210> 4
<211> 35
<212> PRT
<213> Human immunodeficiency virus type 1

<220>
<223> V3 domain of strain 93TH966.8

<400> 4
Cys Thr Arg Pro Ser Asn Asn Thr Arg Thr Ser Thr Thr Ile Gly Pro
1 5 10 15

Gly Gln Val Phe Tyr Arg Thr Gly Asp Ile Thr Gly Asn Ile Arg Lys
20 25 30

Ala Tyr Cys
35